possible in the keep-alive state. Equally important is that the energy-conserving computer system is rendered remotely accessible by a modem and instantaneously restorable to resume previous activity. In contrast, to obtain these convenient features, a conventional computer system needs to be continuously powered, not only incurring substantial energy waste but endangering mechanical/electronic durability.

Although these preferred embodiments have been described hereinbefore as applied to a personal computer system, the present invention is applicable to other server and super computer system as well as to any information-processing apparatus to be operable manually, automatically, remotely, and instantaneously from the keep-alive state through the least amount of power technologically possible. Thus, it is clearly understood that such embodiments are provided by way of illustration and example only and are not to be taken by way of limitation as numerous variations, changes, modification, and substitutions will occur to those skilled in the art without departing from the invention herein. Accordingly, it is intended that the invention be limited only by the spirit and scope of the appended claims.

What is claimed is:

1. An energy-conserving computer system comprising:

(a) keep-alive power-distributing circuitry for continuously distributing keep-alive DC power;

(b) a first group of circuitry in power connection with said keep-alive power-distributing circuitry, said first group of circuitry comprising keep-alive memory means for storing task information needed to be kept alive;

(c) switchable power-distributing circuitry comprising switching means and a plurality of input/output connector means, wherein said switching means is provided for selectively distributing main DC power to said plurality of input/output connector means, and said plurality of input/output connector means each is provided for detachably establishing circuit communication with a circuit card; and

(d) a second group of circuitry in power connection with said switchable power-distributing circuitry, said second group of circuitry comprising main microprocessor circuitry.

2. The energy-conserving computer system of claim 1 further comprising means for generating said keep-alive DC power and said main DC power, from an external AC-power source.

3. The energy-conserving computer system of claim 1 further comprising means for supplying said keep-alive DC power and said main DC power, wherein said means for supplying is selected from the group consisting of at least one non-rechargeable battery cell, at least one rechargeable battery cell, at least one dynamo, at least one solar cell, at least one fuel cell, and their combinations.

4. The energy-conserving computer system of claim 1 further comprising (a) first means for

supplying said keep-alive DC power, wherein said first means is selected from the group consisting of at least one non-rechargeable battery cell, at least one rechargeable battery cell, at least one dynamo, at least one solar cell, at least one fuel cell, and their combinations, and (b) second means for generating said main DC power from an external AC-power source.

5. The energy-conserving computer system of claim 4, wherein said first means and said second means are arranged in such a manner as to allow said first means to supply backup DC power to said second means, when said external AC-power source suddenly ceases the supplying of AC power.

6. The energy-conserving computer system of claim 1 further comprising:

(a) first means for supplying said keep-alive DC power, selected from the group consisting of at least one non-rechargeable battery cell, at least one rechargeable battery cell, at least one dynamo, at least one solar cell, at least one fuel cell, and their combinations;

(b) second means for generating said main DC power from an external AC-power source, wherein said second means is adapted to receive backup DC power from said first means, when said external AC-power source suddenly ceases the supplying of AC power;

(c) second switching means for selectively distributing said backup DC power from said first means to said second means, and

(d) a set of instructions including the steps of (i) saving any modified files to nonvolatile memory storage, (ii) updating said task information needed to be kept alive, and (iii) requesting said second switching means to cease the supplying of said backup DC power from said first means to said second means.

7. The energy-conserving computer system of claim 1 further comprising a rechargeable battery for supplying said keep-alive DC power and regulated DC-power circuitry for generating said main DC power, from an external AC-power source, wherein said rechargeable battery and said regulated DC-power circuitry are arranged in such a manner as to allow said rechargeable battery to be recharged by said main DC power when said external AC-power source is present for generating said regulated DC power, and to allow said rechargeable battery to provide backup DC power to said regulated DC-power circuitry for distribution when said external AC-power source is suddenly absent.

8. The energy-conserving computer system of claim 1, wherein said first group of circuitry further comprises keep-alive microprocessor circuitry for controlling an activity of said switching means.

9. The energy-conserving computer system of claim 1, wherein said keep-alive power-distributing circuitry further comprises keep-alive input/output connector means each for detachably establishing circuit communication with a circuit board to be kept alive, and said first group of circuitry further comprises clock circuitry.

10. The energy-conserving computer system of claim 1, wherein said keep-alive power-distributing circuitry further comprises a first input/output connector means for detachably establishing circuit communication with said keep-alive memory means and additional input/output connector means each for detachably establishing circuit communication with a circuit board to be kept alive.

11. The energy-conserving computer system of claim 1, wherein said keep-alive power-distributing circuitry further comprises keep-alive input/output connector means rendered visually distinguishable from said plurality of input/output connector means comprised in said switchable power-distributing circuitry.

12. The energy-conserving computer system of claim 1, wherein said keep-alive power-distributing circuitry further comprises keep-alive input/output connector means labeled differently from said plurality of input/output connector means comprised in said switchable power-distributing circuitry.

13. The energy-conserving computer system of claim 1 further comprising means for changing the configuration between said keep-alive power-distributing circuitry and said switchable power-distributing circuitry.

14. The energy-conserving computer system of claim 1 further comprising a manual-operable means in circuit communication with said main microprocessor circuitry, for requesting (a) said task information to be updated in accordance with the operating activity of said energy-conserving computer system, and (b) said switchable power-distributing circuitry to be deactivated so as not to distribute said main DC power to said second group of circuitry.

15. The energy-conserving computer system of claim 1 further comprising a manual-operable means and a set of instructions, wherein said manual-operable means is provided for actuating said main microprocessor circuitry to execute said set of instructions, and said set of instructions comprises the steps of (a) saving any modified files to nonvolatile memory storage, (b) updating said task information needed to be kept alive, and (c) requesting said switchable power-distributing circuitry not to distribute said main DC power to said second group of circuitry.

16. The energy-conserving computer system of claim 15, wherein said set of instructions further comprises additional steps of (a) locking, in which the energy-conserving computer system is rendered inaccessible by a keyboard means, and (b) unlocking, in which the energy-conserving computer system is rendered accessible by said keyboard means only if a valid password is entered.

17. The energy-conserving computer system of claim 1 further comprising a keyboard means and means for selectively locking and unlocking said keyboard means, so as to render the energy-conserving computer system respectively inaccessible and accessible by said keyboard means.

18. The energy-conserving computer system of claim 1 further comprising an operating instruction for restoring previous tasks in accordance with said task information stored in said keep-alive memory when

said switchable power-distributing circuitry is actuated for distributing said main DC power to said second group of circuitry.

19. The energy-conserving computer system of claim 1, wherein said switchable power-distributing circuitry further comprises a plurality of outlet means each for detachably establishing power connection with a peripheral device to be selectively energized by said main DC power.

20. The energy-conserving computer system of claim 1 further comprising:

(a) second switchable power-distributing circuitry comprising second switching means and a plurality of outlet means, wherein said second switching means is provided for selectively distributing second main DC power to said plurality of outlet means, and said plurality of outlet means each is provided for detachably establishing power connection with a peripheral device to be selectively energized;

(b) a nonvolatile memory-storage means coupled to one of said outlet means comprised in said second switchable power-distributing circuitry;

(c) means for supplying said keep-alive DC power, said main DC power, and said second main DC power, wherein said means for supplying is selected from the group consisting of at least one non-rechargeable battery cell, at least one rechargeable battery cell, at least one dynamo, at least one solar cell, at least one fuel cell, and their combinations;

(d) volatile memory means in power connection with said switchable power-distributing circuitry, for storing information only when said switchable power-distributing circuitry is actuated; and

(e) a housing for disposing therein said keep-alive power-distributing circuitry, said first group of circuitry, said switchable power-distributing circuitry, said second group of circuitry, said second switchable power-distributing circuitry, said nonvolatile memory-storage drive, said means for supplying, and said volatile memory means.

21. The energy-conserving computer system of claim 20 further comprising means for generating regulated DC power from an AC-power supply, wherein said means for supplying and said means for generating are arranged in such a manner as to allow said means for generating to supply said regulated DC power to said means for supplying, so as to supply said main DC power and said second main DC power when said AC-power supply is present for generating said regulated DC power.

22. The energy-conserving computer system of claim 20 further comprising means disposed on an external surface of said housing, for manually changing the configuration between said keep-alive power-distributing circuitry and said switchable power-distributing circuitry.

23. The energy-conserving computer system of claim 20 further comprising an operable means and a screen, wherein said operable means, said screen, and said housing are adapted in such a manner as to allow

said operable means to actuate selectively a keep-alive state in which said switchable power-distributing circuitry and said second switchable power-distributing circuitry are deactivated when said screen is moved to a non-viewable position and an operating state in which said switchable power-distributing circuitry and said second switchable power-distributing circuitry are activated when said screen is moved to a viewable position.

24. The energy-conserving computer system of claim 23 further comprising a set of instructions resided in said keep-alive memory means that will be automatically executed when said screen is moved to said non-viewable position, wherein said set of instructions comprises the steps of (a) actuating said second switchable power-distributing circuitry, (b) saving any modified files to said nonvolatile memory-storage means, (c) updating said task information needed to be kept alive in said keep-alive memory means, and (d) deactivating said switchable power-distributing circuitry and said second switchable power-distributing circuitry, so as to enter said keep-alive state.

25. The energy-conserving computer system of claim 23 further comprising a set of instructions resided in said keep-alive memory means that will be automatically executed when said screen is moved to said viewable position, wherein said set of instructions comprises the steps of (a) actuating said switchable power-distributing circuitry and said second switchable power-distributing circuitry, (b) restoring previous tasks in accordance with said task information to said volatile memory means, and (c) entering a partial operating state, in which said switchable power-distributing circuitry remains activated but said second switchable power-distributing circuitry is deactivated.

26. The energy-conserving computer system of claim 20 further comprising (a) third switchable power-distributing circuitry comprising third switching means for selectively supplying third DC power, (b) cooling means coupled to said third switchable power-distributing, for dissipating heat.

27. The energy-conserving computer system of claim 26, wherein said third switching means is adapted to be temperature sensitive so as to actuate said cooling means when the temperature inside said energy-conserving computer system exceeds a preset value.

28. The energy-conserving computer system of claim 1 further comprising (a) second switchable power-distributing circuitry comprising additional switching means for selectively supplying power selected from the group consisting of DC power, AC power, and regulated DC power, and (b) cooling means coupled to said second switchable power-distributing circuitry, for dissipating heat.

29. The energy-conserving computer system of claim 28, wherein said additional switching means is adapted to be temperature sensitive so as to actuate said cooling means when the temperature inside said energy-conserving computer system exceeds a preset value.

30. An energy-conserving motherboard comprising:

(a) keep-alive power-distributing circuitry for distributing keep-alive DC power, wherein said keep-alive power-distributing circuitry comprises means for connecting at least with keep-alive memory means to be kept alive by said keep-alive DC power; and

(b) switchable power-distributing circuitry for selectively distributing main DC power, wherein said switchable power-distributing circuitry comprises a plurality of input/output connector means for establishing circuit communication with circuit cards to be selectively energized by said main DC power.

31. The energy-conserving motherboard of claim 30 further comprising microprocessor means that contains keep-alive microprocessor circuitry and main microprocessor circuitry in power connection respectively with said keep-alive power-distributing circuitry and with said switchable power-distributing circuitry.

32. The energy-conserving motherboard of claim 30 further comprising keep-alive memory means in power connection with said keep-alive power-distributing circuitry.

33. The energy-conserving motherboard of claim 30, wherein said means for connecting comprised in said keep-alive power-distributing circuitry is adapted to comprise keep-alive input/output connector means for detachably establishing circuit communication with keep-alive memory means and with at least one circuit board to be kept alive.

34. The energy-conserving motherboard of claim 33, wherein said keep-alive input/output connector means comprised in said keep-alive power-distributing circuitry are rendered visually distinguishable from said plurality of input/output connector means comprised in said switchable power-distributing circuitry.

35. The energy-conserving motherboard of claim 30 further comprising means for changing the configuration between said keep-alive power-distributing circuitry and said switchable power-distributing circuitry.

36. The energy-conserving motherboard of claim 30 further comprising main microprocessor circuitry coupled to said switchable power-distributing circuitry, an interfacing means in circuit communication with said main microprocessor circuitry, and a primary memory-storage means stored therein a set of instructions, wherein said interfacing means is provided for transmitting a signal issued from an external manual-operable means so as to request said main microprocessor circuitry to execute said set of instructions, and said set of instructions comprises the steps of (a) updating said task information needed to be kept alive, and (b) requesting said switchable power-distributing circuitry not to distribute said main DC power.

37. An operating system for controlling an activity of an energy-conserving computer system that comprises keep-alive memory means and main volatile memory means, said operating system comprising the instructions of:

(a) storing task information needed to be kept alive to said keep-alive memory means, when a deactivating signal to deactivate said main volatile memory means is received; and

(b) restoring previous tasks in accordance with said task information, when an activating signal to activate said main volatile memory means is received.

38. The operating system of claim 37 further comprising an additional instruction for saving any modified files to nonvolatile memory storage, when receiving said deactivating signal.

39. The operating system of claim 37, wherein said storing includes storing the names of any software programs and files opened and their activeness status.

40. The operating system of claim 37 further comprising an additional instruction for allocating part of said keep-alive memory for storing the content of a file to be manipulated.

41. An energy-conserving mouse system comprising:

(a) an interfacing means for establishing circuit communication with a host computer system that comprises keep-alive power-distributing circuitry for continuously distributing keep-alive power and switchable power-distributing circuitry for selectively distributing main DC power; and

(b) manual-operable means in circuit communication with said interfacing means, wherein said manual-operable means is manually actuatable for requesting said host computer system to enter a keep-alive state in which said switchable power-distributing circuitry is deactivated so as not to distribute said main DC power.

42. The energy-conserving mouse system of claim 41, wherein said manual-operable is manually actuatable for further requesting said host computer system to execute a set of instructions including the steps of (a) saving any modified files to nonvolatile memory storage, (b) storing task information needed be kept alive to keep-alive memory means, and (c) deactivating said switchable power-distributing circuitry so not to distribute said main DC power after completing said saving and said storing.

43. An energy-conserving power-supply system for use in computer, comprising:

(a) keep-alive power-distributing circuitry for continuously distributing keep-alive power;

(b) first switchable power-distributing circuitry comprising a first switching means for selectively distributing main DC power;

(c) second switchable power-distributing circuitry comprising a second switching means for selectively supplying power selected from the group consisting of DC power, AC power, and regulated DC power; and

(d) cooling means for dissipating heat, wherein said cooling means is coupled to said second switchable power-distributing circuitry, so as to be selectively actuated by said second

switchable power-distributing circuitry but not by said first switchable power-distributing circuitry.

44. The energy-conserving power-supply system of claim 43 further comprising means for generating said keep-alive DC power, said main DC power and said regulated DC power, from said AC power.

45. The energy-conserving power-supply system of claim 43 further comprising means for supplying said keep-alive DC power, said main DC power, and said DC power, wherein said means for supplying is selected from the group consisting of at least one non-rechargeable battery cell, at least one rechargeable battery cell, at least one dynamo, at least one solar cell, at least one fuel cell, and their combinations.

46. The energy-conserving power-supply system of claim 43 further comprising (a) first means for supplying said keep-alive DC power, wherein said first means is selected from the group consisting of at least one non-rechargeable battery cell, at least one rechargeable battery cell, at least one dynamo, at least one solar cell, at least one fuel cell, and their combinations, and (b) second means for generating said main DC power and said regulated DC power from an external AC-power source.

47. The energy-conserving power-supply system of claim 43, wherein said second switching means is adapted to be temperature sensitive so as to actuate said cooling means when the temperature inside said computer exceeds a preset value.

add B1

add D2